

## Koch, Kristine

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**From:** Koch, Kristine  
**Sent:** Friday, August 15, 2014 2:13 PM  
**To:** Alex Liverman (liverman.alex@deq.state.or.us); Allen, Elizabeth (allen.elizabeth@epa.gov); Audie Huber (audiehuber@ctuir.com); Bob Dexter; Brian Cunningham (cunningham@gorge.net); callie@ridolfi.com (callie@ridolfi.com); Coffey, Scott; Conley, Alanna (conley.alanna@epa.gov); Erin Madden (erin.madden@gmail.com); Fuentes, Rene (fuentes.rene@epa.gov); Gabriel Moses (b) (6); Gail Fricano (gfricano@indecon.com); Genevieve Angle (Genevieve.Angle@noaa.gov); Hagerman, Paul; Holly Partridge (Holly.Partridge@grandronde.org); JD Williams (jd@williamsjohnsonlaw.com); Jennifer Peterson (peterson.jennifer@deq.state.or.us); Jeremy Buck (jeremy\_buck@fws.gov); Julie Weis (jweis@hk-law.com); Matt McClincy (mcclincy.matt@deq.state.or.us); Michael Karnosh (Michael.Karnosh@grandronde.org); Mike Poulsen (poulsen.mike@deq.state.or.us); Muza, Richard (Muza.Richard@epa.gov); rdelvecchio@indecon.com DelVecchio; Rob Neeley (Robert.Neely@noaa.gov); Rose Longoria - Yakama Nation (rose@yakamafish-nsn.gov); Ryan Sudbury (Ryan.Sudbury@grandronde.org); Sheldrake, Sean (sheldrake.sean@epa.gov); Shephard, Burt (Shephard.Burt@epa.gov); Todd King (KingTW@cdmsmith.com); Tom Downey (tomd@ctsi.nsn.us); Tom Gainer (gainer.tom@deq.state.or.us)  
**Subject:** FW: Dioxin/Furan PRGs and RALs

All – here is the process we have developed for dioxins/furans. Let us know if you have any major concerns with it.

Thanks,

Kristine Koch  
Remedial Project Manager  
USEPA, Office of Environmental Cleanup

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**From:** Koch, Kristine  
**Sent:** Friday, August 15, 2014 2:12 PM  
**To:** 'James McKenna'  
**Cc:** Jennifer Woronets; Sheldrake, Sean; Bob Wyatt (rjw@nwnatural.com); Allen, Elizabeth (allen.elizabeth@epa.gov)  
**Subject:** RE: Dioxin/Furan PRGs and RALs

Jim – Here is the process for evaluation of dioxins/furans for the development of PRGs and RALs. If you agree, then let's proceed with this process. Since this is a time-critical matter, I appreciate Windward being able to develop the FWM next week and look forward to discussing the set-up and calibration with them. Burt is out of the office, but we will be able to proceed in his absence. I'm available on Monday if you would like to have a discussion. Elizabeth is also available for these discussions.

Regards,  
Kristine

Process for evaluating dioxin/furans for development of PRGs and RALs:

Step 1 – Determine which congeners pose the most risk from fish tissue.

- Use Smallmouth Bass whole body (Round 3 only) – EPA has reviewed this data and has determined that the following congeners contribute greater than 85% of the risk: 2,3,7,8-TCDD, 2,3,7,8-TCDF, 1,2,3,7,8-PeCDD, 2,3,4,7,8-PeCDF and 1,2,3,4,7,8-HxCDF.
- Develop FWM for these congeners and calibrate sediment to tissue relationships (congener X sediment to congener X tissue) using site data

Step 2 – Use FWM for each congener to determine sediment concentrations at acceptable risk levels.

Step 3 – Map congener concentrations in surface sediment (heat maps).

Step 4 – Determine if congeners can be summed or remain independent.

Step 5 – Develop RAL curves.

Step 6 – Map RAL concentrations (SMAs).

Step 7 – Compare to previous SMAs.

Step 8 – Make final decision on dioxin/furan PRGs and RALs.

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**From:** James McKenna [<mailto:jim.mckenna@verdantllc.com>]  
**Sent:** Thursday, August 14, 2014 3:41 PM  
**To:** Koch, Kristine  
**Cc:** Jennifer Woronets; Sheldrake, Sean; Bob Wyatt ([rjw@nwnatural.com](mailto:rjw@nwnatural.com))  
**Subject:** RE: Dioxin/Furan PRGs and RALs

Kristine:

Thank you for the clarification you gave us on this issue during our meeting this morning. Based on that conversation we understand that EPA has not yet selected a basis for establishing Dioxin/Furan PRGs and is still interested in working with the LWG on developing a basis for them. We do have Windward resources available to do FS-support work. Before initiating any work we will need clarity on a few issues:

- To perform this D/F work we need to know the subset of congeners that will be evaluated. EPA has expressed concerns about spatial variability in congeners patterns in the Study Area, and a key objective of this work will be to address that concern. Will EPA provide a specific subset of congeners to be modeled for the LWG to consider, or would you prefer that Windward select them?
- Based on our conversation, it is our understanding that the LWG and EPA will work together to develop a mutually agreeable approach for using the model outputs to develop the D/F PRGs and RALs. Will the LWG develop the D/F PRGs and RALs after running the model, or is that something you anticipate EPA will do?

We understand time is of the essence and we share your goal of resolving this issue as soon as practicable. We are happy to convene a conference call with a small group of key people to hammer-out the details in order to ensure we are all on the same page regarding this effort.

Thanks,

Jim McKenna  
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**From:** Koch, Kristine [<mailto:Koch.Kristine@epa.gov>]  
**Sent:** Thursday, August 14, 2014 8:24 AM  
**To:** Bob Wyatt ([rjw@nwnatural.com](mailto:rjw@nwnatural.com)); James McKenna  
**Cc:** Jennifer Woronets; Sheldrake, Sean  
**Subject:** Dioxin/Furan PRGs and RALs

Bob and Jim, several meetings ago, the LWG raised the idea of modeling more than one congener for dioxins/furans. We are still waiting to hear from you whether you want to proceed in this manner (and commitment that Windward would be able to provide the FWMs for the individual congeners). We are not going to expend the resources unless you indicate that this is the path which you wish to proceed. We brought this issue up at the last FS meeting. Since it has been several weeks since we had this discussion, it is imperative that we hear from you by the end of today or we will proceed with the process we have already developed.

Regards,

Kristine Koch  
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